



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,224	08/27/2003	Masaki Sano	03151	4309
23338	7590	08/25/2004		
DENNISON, SCHULTZ, DOUGHERTY & MACDONALD 1727 KING STREET SUITE 105 ALEXANDRIA, VA 22314				
EXAMINER MONDT, JOHANNES P				
ART UNIT		PAPER NUMBER		
2826				

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,224

Applicant(s)

SANO, MASAKI

Examiner

Johannes P Mondt

Art Unit

2826



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1--6 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 5-6 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 07/28/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al (6,335,548 B1) in view of Kurokawa et al (Japanese Patent, Patent No.: JP3599062624A). Roberts et al teach (cf. title, abstract, Figures 6-8) an LED device 200 comprising: an LED 502/601/602 (cf. col. 16, l. 64 - col. 17, l. 35) mounted on a substrate 501 (cf. col. 17, l. 37-49); a transparent encapsulant 203 of epoxy (cf. col. 22, l. 5-30) including phosphor particles (cf. col. 24, l. 33-44) for changing a color of light emitted from the LED (cf. col. 24, l. 33-44; moreover, the limitation "for changing a color of light emitted from the LED" constitutes functional language irrelevant in the present invention drawn as it is to a device rather than a method of making a device), and sealing the LED (cf. col. 22, l. 44-52); and a dye dyeing the sealing resin for correcting

Art Unit: 2826

the color of the light from the LED (cf. col. 24, l. 34-39; see also claim 52 in Roberts, col. 39, l. 8-10; moreover: the limitation “for correcting the color of the light from the LED” constitutes a functional limitation irrelevant in the present invention, drawn as it is to a device rather than a method of making a device).

Roberts et al do not necessarily teach the further limitation as claimed that the transparent epoxy encapsulant is a *resin*. However, it would have been obvious to include said further limitation in view of Kurokawa et al, who teach the selection of an epoxy resin for encapsulating a light-emitting device (cf. title and “Purpose” as stated in Abstract) for the specific purpose of achieving the following advantages: (a) keeping high transparency over a long time, (b) obtaining an extremely low tendency of discoloration at high temperature and (c) giving a cured resin in a short time.

Motivation to include the teaching of the selection of a resin for the transparent epoxy encapsulant derives from aforementioned advantages (a), (b) and (c).

Combination of said teaching with the invention by Roberts merely involves the selection of the particular material selection of the transparent epoxy resin following verbatim the process as delineated by Kurokawa et al in “Constitution” (Abstract).

Success in the implementation of the combination can thus be reasonably expected.

On claim 2: because said dye includes “spectrally selective light absorbing dyes” (cf. col. 24, l. 36-39) said dye inherently has a color (the very essence of color being the existence of spectrally selective absorption of light) and corrects the color of the light emitted from the LED for a desired color, because by its very selective absorption the spectrum of the light emitted from the LED is corrected.

On claim 3: the only manner in which “selective light absorbing dyes” (cf. col. 24, l. 38-39) can “tailor” (cf. col. 24, l. 35) “the spectrum of radiation emitted by the radiation emitter” (202; Figure 6, cf. col. 9, l. 2-7) is by absorbing the light emitted by said radiation emitter, because absorption is the only operation on light performed by said light absorbing dyes. Any object absorbing light of a given color has itself a color that is complementary to said given color, because in order to see the object in a certain color light of that color must not be absorbed by said object. Therefore, Roberts et al teach the dye to have a complementary color (i.e., color that is complementary) to the color of the light emitted from the LED for a desired color (“tailor” being inherently aiming at a desired result). Furthermore, the functional language “for a desired color” is without patentable weight in the present device application.

4. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al and Kurokawa et al as applied to claim 1, and further in view of Reeh et al (US 2001/00000622 A1).

As detailed above, claim 1 is unpatentable over Roberts et al in view of Kurokawa et al. Although neither Roberts et al do nor Kurokawa et al necessarily teach the further limitation that at least a surface (i.e., external part or layer) is dyed by the dye, it would have been obvious to include said further limitation in view of Rhee et al, who, in a patent drawn to a light-emitting device with a spectrum correcting component 6 added to a region 4 (cf. col. [0089]) with transparent epoxy resin as its main basic material constitution (cf. section [0099]) that changes the spectrum of the emitted light from light-emitting device 1 (hence closely related to the invention by Roberts et al),

teach that a spectrum correcting component 6, in this case a luminescent material, be added in an external part or layer abutting an outer surface of said transparent (epoxy) resin. Rhee et al teach this embodiment of their light-emitting device to have the advantage that the path length through the luminescence conversion layer to have approximately the same value ("size") for all of the radiation emitted by the semiconductor body 1, which is important, according to Rhee et al in the case when the exact hue (i.e., color) is important (cf. section [0090]). Because this importance of exact color is established as important in Roberts et al *motivation* exists to combine the references of Roberts et al and Rhee et al. The teaching by Rhee et al can be easily *combined* with the invention by Roberts et al by following the process steps delineated by Rhee et al (cf. col. [0093]) that ensure that the spectrum conversion layer is restricted to an external part or layer abutting the outer surface. *Success* in implementing the aforementioned combination can therefore be reasonably expected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Johannes P Mondt whose telephone number is 571-272-1919. The examiner can normally be reached on 8:00 - 18:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2826

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
August 22, 2004

Patent Examiner:



Johannes Mondt
Art Unit: 2826